ULTANOV, N.A., kand.tekhn.nauk

Byaluating tractive properties of wheel drives in earthmoving machines.
Stroi.i dor.mashinostr. 5 no.3:16-20 Mr '60. (MIRA 13;6)

(Traction engines)

(Earthmoving machinery)

MIKHAYLOV, B.I., inzh.; UL'YANOV, N.A., kand.tekhn.nauk

Automatic adjustment of motor grader operations. Stroi.i dor.
mashinostr. 5 no.7:6-7 Jl '60. (MIRA 13:7)

(Automatic control)

(Graders (Parthmoving machinery))

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

ULIYANOV, N. A., dotsent, kand. tekhn. nauk

Choice of parameters and operating conditions of a wheelmounted motor of continuous earthmovers with cutting blades. Sbor. trud. MISI no.39:268-274 61. (MIRA 16:4)

(Earthmoving machinery)

UL'YANOV, Nikolay Aleksandrovich, kand. tekhn. nauk; BAZANOV, A.F., kand.tekhn.nauk, retsenzent; KONONENKO, M.A., inzh., red SAVEL'YEV, Ye.Ya., red.izd-va; SMIRNOVA, G.V., tekhn.red.

[Fundamentals of the theory and design of wheeled tractors for excavating machinery] Osnovy teorii i rascheta kolesnogo dvizhitelia zemleroinykh mashin. Moskva, Mashgiz, 1962.

206 p. (MIPA 16:4)

(Tractors-Design and construction)
(Excavating machinery)

UL'YANOV, N.A., kand. tekhn. nauk

Method of making traction computations for rollers on pneumatic tires. Stroi. i dor. mash. 7 no.8:15-16 Ag '62.

(Rollers (Earthwork))

ALEKSEYEVA, T.V., kand. tekhn. nauk; ARTEM'YEV, K.A., kand. tekhn. nauk; BROMBERG, A.A., prof.; VOYTSEKHOVSKIY, R.I., inzh.; UL'YANOV, N.A., kand. tekhn. nauk; Prinimal uchastiye KONONENKO, M.A., inzh.; FEDOROV, D.I., kand. tekhn. nauk, retsenzent.

[Machines for earthwork; theory and calculation] Mashiny dlia zemlianykh rabot; teoriia i raschet. [By] T.V. Alekseeva i dr. Izd.2., perer. i dop. Moskva, Izd-vo "Mashinostroenie," 1964. 467 p. (MIRA 17:5)

JL'YANOV, N.G.

Testing an experimental hydraulic clutch in a ZIS-150 car. Sborn.trud.
lab.prob.bystr.mash. 3:205-213 '53. (MIRA 9:9)
(Automobile--Transmission devices)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

VASILIYEVA, N.N.; ULIYANOV, N.K.

Geobotanical studies as a method of prospecting for ore deposits in central Kazakhstan. Inform.sbor.VSFGEI no.50:83-94 (MIRA 15:8)

(Kazakhstan-Prospecting) (Kazakhstan-Phytogeography)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

TSYKUNKOVA, N.A.; UL'YANOV, N.K.

Occurrences of metals in eluvial and talus formations of some ore deposits in central Kazakhstan. Inform.sbor.VSEGEI no.50:71-81 161. (MIRA 15:8)

(Kazakhstan-Metals, Rare and minor) (Kazakhstan-Nonferrous metals)

MAROCHKIN, N.I., glav. red.; MARKOVSKIY, A.P., zam. glav. red.;

UL'YANOV, N.K., zam. glav. red.; CAHESHIN, G.S., red.;

ZAYTSEY, I.K., red.; KNIPOVICH, Yu.N., red.; KULIKOV, M.V., red.;

LABAZIN, G.S., red.; LUR'YE, M.L., red.; SINCHENKO, T.N., red.;

SPIZHARSKIY, T.N., red.; STERLIH, D.Ya., red.; TATARINOV, P.M., red.;

ELYAKOVA, Ye.Ye., nauchnyy red.; MAKRUSHIN, V.A., tekhn. red.

[Yearbook of the results of studies by the All-Union Geological Institut] Ezhegodnik po rezul'tatam rabot VSECEI. Leningrad, Otdel nauchn.-tekhn. informatsi, 1961. 203 p. (Leningrad. Vsesoiyznyi geologicheskii institut. Informatsionnyi sbornik, vsesoiyznyi geologicheskii institut. Informatsionnyi sbornik, (MIRA 15:6)

(Geology)

ULIVANOV, N.N., inzh.; SHPORKHUN, V.I., inzh.

Distributing device for the refluxing of packed columns. Khim.

mashinostr. no.3:3-4 My-Je 163.

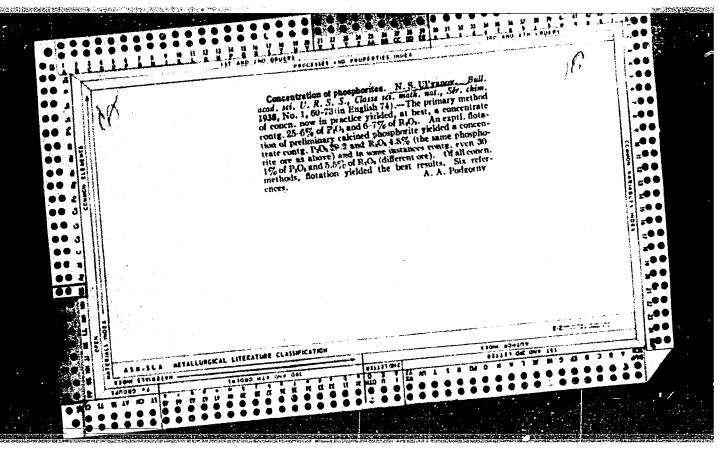
(MIRA 16:11)

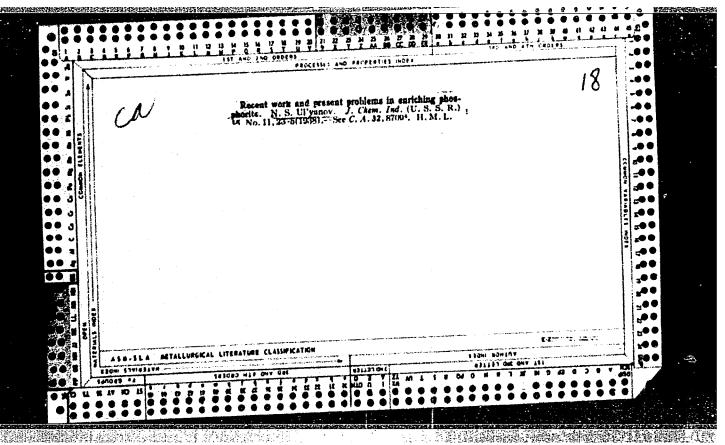
ARUTYUNYAN, B.Sh.; BORISOV, V.M.; ZHEPLINSKIY, B.M.; MESROPYAN, N.N.; MESHCHERYAKOV, N.F.; ULYANOV, N.S.

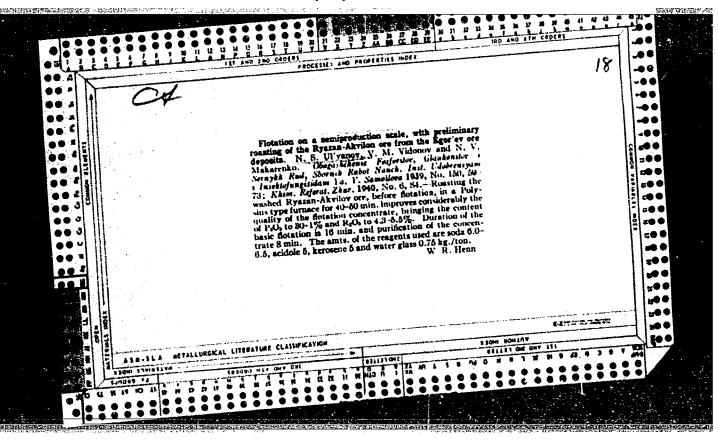
Apparatus for the destruction of flotation froth. Khim. prom. no.2:146-147 F 163. (MIRA 16:7)

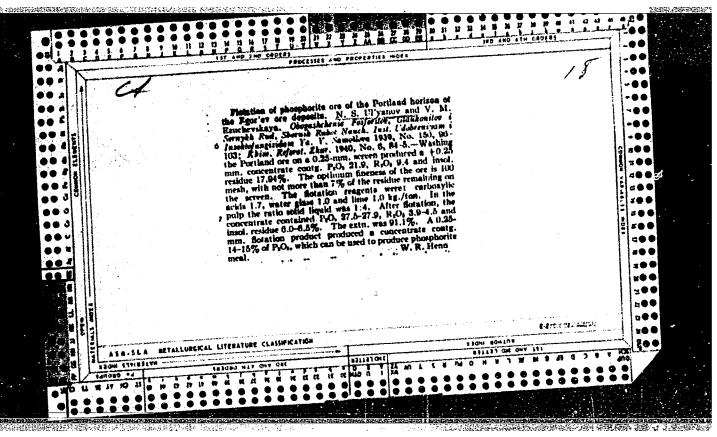
(Flotation)

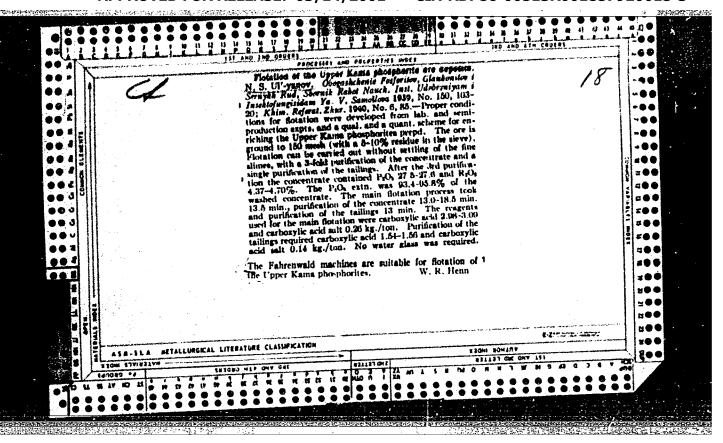
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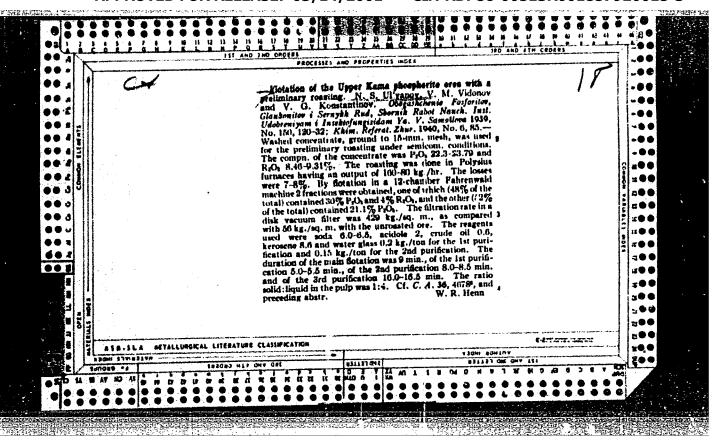


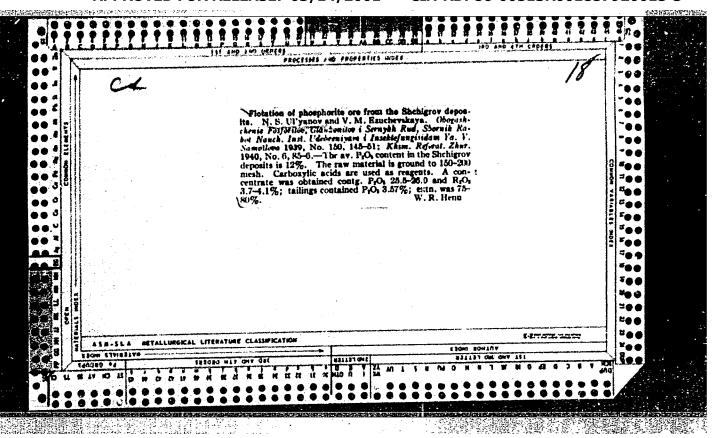


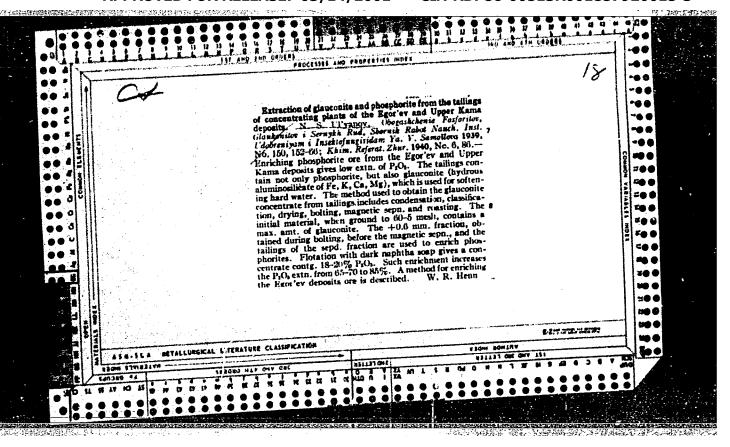












UL'YANOV, N.S.

"Extraction of Glauconite and Phosphorite from the Tailings of Concentrating plants of the Egor'yev and Upper Kama Depostis,"
N.S. Ul'yanov, Obogashcheniye Fosforitov, Glaukonitov i Sernykh Rud, Sbornik Rabot Nauch Inst Ubobreniyam i Insektofungisidam im Ya. V. Samoylov, 1939, No 150, pp 152-66; Khim Referat Zhur 1940, No 6, pp 86 (SEE: Inst. Insect/Fungi. in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949

UL'YANOV, N. S.

"Flotation of Phosphorite Ore of the Portland Horizon of the Egor'yev Ore Deposits," -N. S. Ul'yanov, and V. M. Ezuchevskaya, (Above Periodical) pp 96-103, Khim Referat Khur 1940, No 6, pp 84-5 (SEE: Inst. Insect/Fungi. in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

UL'YANOV, N. S.

"Flotation of the Upper Kama Phosphorite Ore Deposits," N. S. Ul'yanov, Above Periodical pp 103-20; Khim deferat Zhur, 1940, No 6, 85 pp (SEE: Inst. Insect/Fungi. in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949

"Flotation of the Upper Nama Phosphorite Ores with a Preliminary Roasting," N. S. Ul'yanov, V. M. Vidonov, and V. G. Konstantimov, (Above Periodical) pp 120-132; Khim Referat Zhur 1940, No 6, pp 05 (SEE: Inst. Insect/Fungi. in Ya. V. Samoylov)

50: U-237/49, d April 1949

"Flotation of Phosphorite Ore from the Shchigrov Deposits,"
N. S. Ul'yanov, and V. M. Ezuchevskaya, (Above Periodical) pp 145-51,
Khim MeTerat Zhur 1940, No, 6, pp 85-6 (SEE: Inst. Insect/
Fungi. in Ya. V. Samoylov)

SO: U-237/49, 8 April 1949

UL'YANGV, N. S.

"Flotation on a Semiproduction Scale, with Preliminary Roasting of the Ryazan-Akvilon Ore from the Egor'yev Ore Seposits," N. S. Ul'yanov, V. M. Vidonov, and N. V. Makarenko, (Above Periodical) pp 59-73, Khim Referat Zhur 1940, No 6 pp 84 (SEE: Inst. Insect/Fungi. in Ya. V.

SO: U-237/49, 8 April 1949

"APPROVED FOR RELEASE: 03/14/2001 CIA-R

CIA-RDP86-00513R001857920015-3

USSR/Chemistry Fertilizers

FD-3000

Card 1/1

Pub. 50-1/17

Author

: Ul'yanov, N. S. *

Title

The most immediate tasks of the mined chemical raw materials

industry

Periodical

: Khim. prom. No 6, 321-324, Sep 1955

Abstract

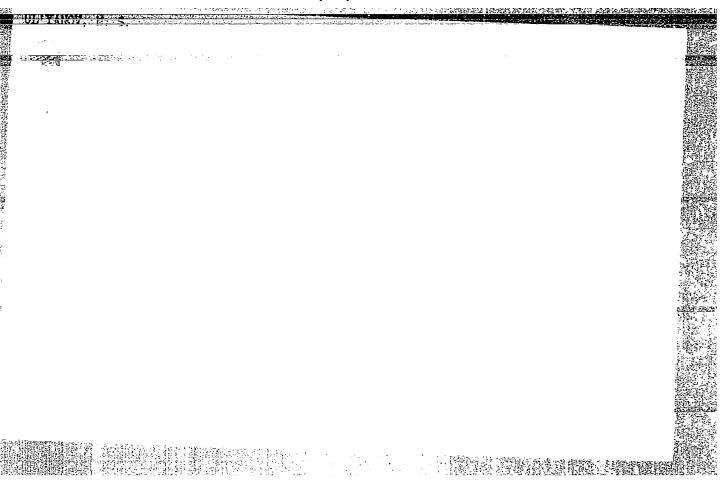
: Discusses the mining of phosphate and potassium minerals, suggesting improvements. On the basis of USA and German experience, recommends enrichment of potassium salts by flotation and expresses the opinion that the use of a hydrocyclone in combination with flotation methods is advisable. States that the gravitational method for the enrichment of Chulak-Tau and Ak-Say phosphorites is still in need of improvement, while enrichment of phosphorites by flotation has yielded good results. Says that research on the replacement of the autoclave method of melting out sulfur has lagged and should be expedited.

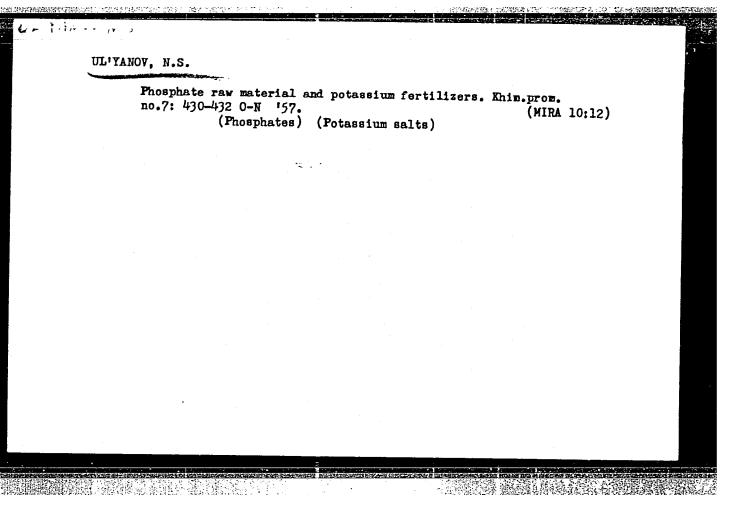
Institution

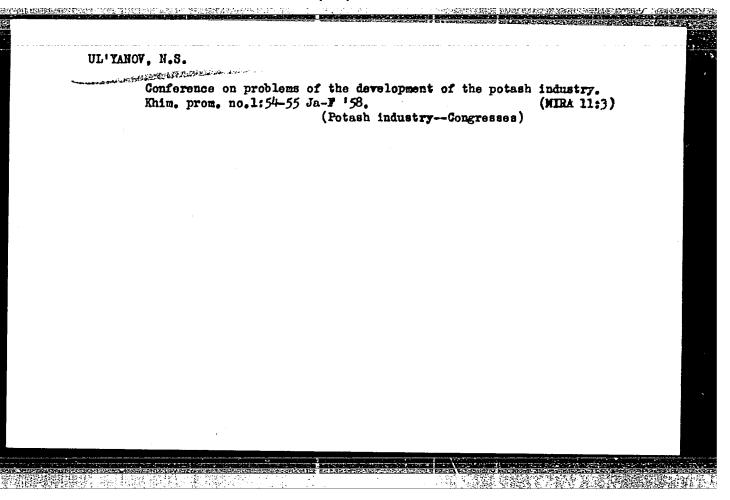
Main Administration of the Mined Chemical Raw Materials Industry

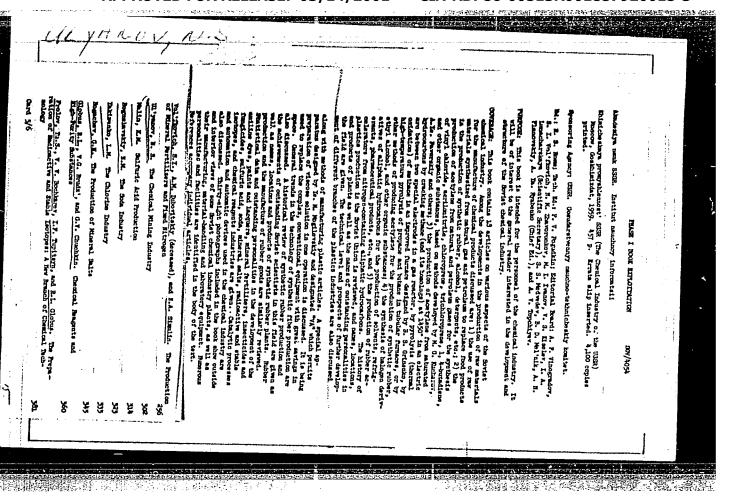
(*Chief)

推到自己的的基本。在1986年,1985年









UL'YANOV, Nikolay Yegorovich; LISTOV, I.V., red.; MEL'NIKOV, V.I., tekhn. red.

[Outstanding people of Luzino] Znatnye liudi Luzino. Omsk,
Omskoe knizhnoe izdatel'stvo, 1960. 70 p. (MIRA 14:12)
(Ul'yanovskii District (Omsk Province)—Agricultural workers)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

LEKAYE, V.M.; YELKIN, L.N.; UL'YANOV, N.S., kand. tekhn. nauk, red.

[Modern methods of sulfur recovery from sulfur ores]
Sovrembly esposoby polucheniia sery iz sernykh rud;
uchebice posobie. Moskva, Mosk. khimiko-tekhnolog. in-t im.
D.I.Mendeleyeva, 1961. 75 p.
(Sulfur)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

UL'YANOV, N.S.

Problems in the development of mining, ore dressing, and chemical processing industries. Gor. zhur no.5:3-5 # '63. (MIRA 16:5)

1. Gosudarstvennyy komitet po khimii pri Gosplane SSSR. (Apatite) (Phosphates) (Potassium) (Sulfur)

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UL'YANOV, 0.1.

Designing a ferrodynamic galvanometer. Izv.vys.ucheb.zav.; prib. 7 no.2146-52 164. (MIRA 18:4)

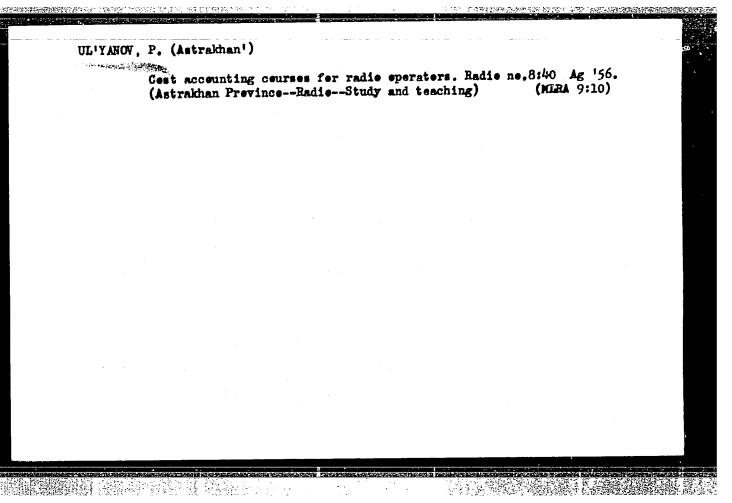
1. Kuybyshevskiy politekhnicheskiy institut imeni Kuybysheva. Rekomendovana kafedroy izmeritelincy tekhniki.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

UL'YANOV, P., polkovnik.

The eastern Pomeranian operation. Voen.snan. 29 no.9:10-11 S '53.
(World War, 1939-1945--Campaigns)

(World War, 1939-1945--Campaigns)



ABRAMOV, A.A., redaktor; BOLTYANSKIY, V.G., redaktor; VASIL'YEV, A.M., redaktor; MEDVEDEV, B.V., redaktor; MYSHKIS, A.D., redaktor; NIKOL'SKIY, S.M., otvetstvennyy redaktor; POSTNIKOV, A.G., redaktor; PROKHOROV, Yu.V., redaktor; HYBNIKOV, K.A., redaktor; UL'IANOY, P.L., redaktor; USPENSKIY, V.A., redaktor; CHETAYEV, N.G., redaktor; SHILOV, G.Ye., redaktor; SHIRSHOV, A.I., redaktor; SIMKINA, Ye.N., tekhnicheskikh redaktor

[Proceedings of the third All-Union mathematical congress] Trudy tretiego vsessiusnogo matematicheskogo s*ezda. Moskva, Izd-vo Akademii nauk SSSR. Vol.1. [Reports of the sections] Sektsionnye doklady. 1956. 236 p. (MIRA 9:7)

 Vsesoyuznyy matematicheskiy s*yezd.3rd Moscow, 1956. (Mathematics)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

BEREZOVIKO, P.; KOZHEVNIKOV, N., inzh.-tekhnolog; M.L'NIKOV, A.;
UL'YANOV, P., konditer

Advice to the cook. Obshchestv.pit. no.11:16-17 N '59.
(HIRA 1323)

1. Upravleniye rabochego snabzheniya Sverdlovskogo sovnarkhoza
(for Kozhevnikov).

(Cookery)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

ULIYANOV, P.

Party organization of the interfarm building organizations. Sel'.stroi. 15 no.8:12-14 Ag '60. (MIRA 13:8)

1. Sekretar' partorganizatsii Gul'kevichskogo meshkolkhosstroya Krasnodarskogo kraya. (Krasnodar Territory-Building) (Collective farms--Interfarm cooperation)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

ULIYANOV, P., kand.economicheskikh nauk

Socialist economy is the indestructible basis for our country's defenses.

Tyl i snab.Sov.Voor.Sil 2l no.2:10-15 F '61. (MIRA 14:6)

(Russia—Economic conditions)

Ul'YANOV, P., kand.ekonomicheskikh nauk

Communism is an abundance. Komm.Vooruzh.Sil 2 no.3:39-47 F'62.

(MIRA 15:1)

(Cost and standard of living)

ULYANON 1.11.

AID Nr 971-17 20 May

VACUUM CLADDING OF REFRACTORY METALS (USSR)

Ul'yanov, P. A., N. D. Tarasov, and S. F. Koftun. Tsvetnyye metally, no. 3, Mar 1963, 74-76. S/136/63/000/003/004

The cladding of Nb, Mo, and Ta with 1X18H9T [AISI-321] stainless steel, Nichrome, 3N-602 alloy [3% Fe, 0.35-0.75% Al and Ti, 0.4% Mn, 19-22% Cr, 1.8-2.3% Mo, 0.8% Si, 0.08% C, 1.3-1.8% Nb], and zirconium has been investigated experimentally. Cladding was performed in a vacuum rolling mill designed by the Physicotechnical Institute of the Ukrainian Academy of Sciences. Refractory billets were mechanically cleaned or pickled, spot welded or riveted to the cladding material, heated in vacuum to the rolling temperature, and then rolled to the required thickness. Pressure in the vacuum system during heating and rolling was maintained at 4.10-5 mm Hg or lower. In order to prevent work hardening, the rolling temperature was maintained above that of the recrystallization of the rolled metal. The strength of the

Card 1/2

AID Nr. 971-17 20 May

VACUUM CLADDING [Cont'd]

8/136/63/000/003/003/004

bond between the cladding and the base metal was found to increase with increasing reduction and with higher rolling temperatures. Microhardness tests showed that Mo and Cr-Ni alloy claddings do not form chemical compounds in the interface zone; A sharp increase of interface microhardness from - 230 to 740 kg/mm² was observed in Nb clad with ∂N -602 alloy. Some hardness increase was observed in Nb clad with Zr or Ti. Aging at 1200°C for 2 hrs had little or no effect on the structure or strength of the bond between Mo or Nb and Cr-Ni alloy cladding; aging at 1200°C for 10 hrs increased bond strength by 15-20%. Shear strength of the bond between niobium and zirconium cladding rolled at 1100°C with reductions of 20 or 40% was - 30 or 64 kg/mm², respectively, and that between molybdenum and ∂N -602 cladding rolled at 1190°C with reductions of 20 or 45% was - 28 or 43 kg/mm², respectively.

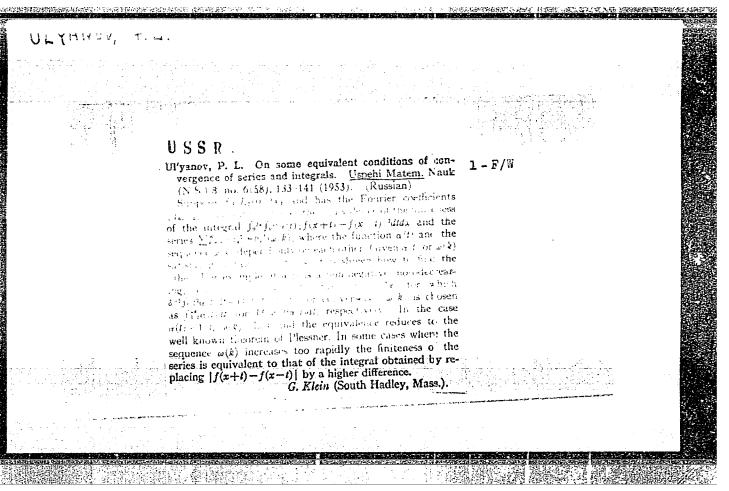
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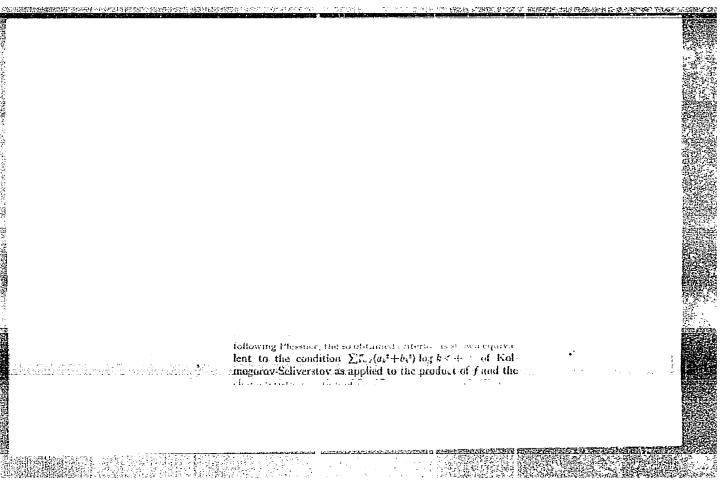
UL'YANOV, P.L.

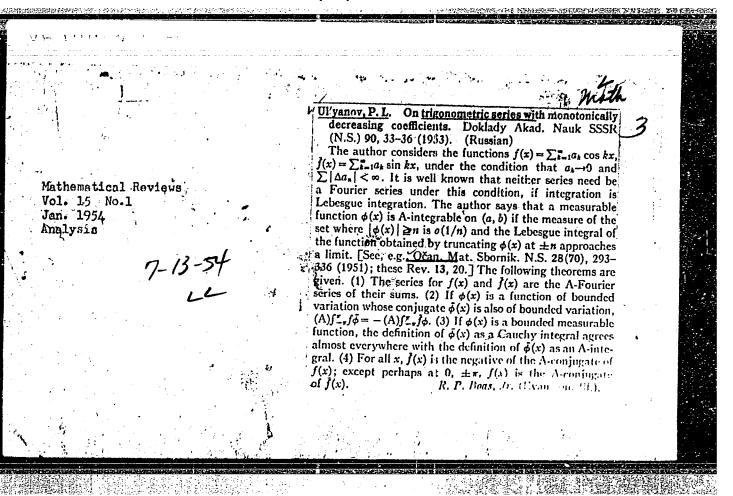
Series in Haar's system. Vest. Mosk. un. Ser. 1: Mat., mekh. 20 no.4135-43 Jl-Ag 165. (MIRA 18:9)

1. Kafedra teorii funktsii i funktsional'nogo analiza Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"







レンドン として Y HNOV トレ・ USSR/Mathematics - Fourier series

FD-1427

Card 1/1

: Pub. 64 - 5/9

Author

: Ul'yanov, P. L. (Moscow)

Title

: Application of A-integration to a class of trigonometric series

Periodical

: Mat. sbor., 35 (77), pp 469-490, Nov-Dec 1954

Abstract

: The main results of this work were formulated without proof in the author's article "Trigonometric series with monotonically drcreasing coefficients. "DAN SSSR, 90, No 1, 33-36, 1953. In the present work the author gives the principal definitions and cites certain works devoted to the same problem. He proves that $f(x) = a_0 + \Sigma$ a_k cos kx is a Fourier (A) series of f(x) and its sine-conjugate f(x). Thirteen references, 2 USSR.

Institution:

Submitted: October 28, 1953

Wiyanov, P. L.

Akad. Nauk SSSR (N.S.) 102 (1955), 1977-1080.

(Russian)

A measurable real-valued function f on [a, b] is said to be f-integrable if

(1) $m(x:x \in [a, b], |f(x)| < n) = o(n^{-1})$ and

(2) . $\lim_{n \to \infty} \int_{a}^{\infty} \min[\max(f(x), -n), n] dx = (A) \int_{a}^{a} f(x) dx$ exists and is finite. This notion is attributed to Kolmogorov, and differs hardly at all from the f-integral of fitchmarsh [Proc. London Math. Soc. (2) 29 (1928), 11 (1934), 469-490, IR 15, 27; 16, 467.] The author states that Kolmogorov proved property (1) for all functions on f (1954), 469-490, MR 15, 27; 16, 467.] The author states that Kolmogorov proved property (1) for all functions on f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1925), 24-29], but Kolmogorov seems only to have f (1926), 24-29], but Kolmogorov seems only to have f (1927), 24-29], and if f and f are essentially bounded, then

(A) $\int_0^{\pi} [(x)g(x)dx = -\int_0^{2\pi} [(x)g(x)dx]$. Theorem: If $f \in L_{\nu}(0, 2\pi)$ $(p > 1)$ and f has period 2π , then $\frac{(A)\int_0^{\pi} [f(x+f) - f(x-f)] \det \frac{1}{2} t dt = -\pi f(x)}{\text{for almost all } x \in [0, 2\pi], \text{ A formula is also given for sketched.}}$ Theorem: If $f \in L_{\nu}(0, 2\pi)$ inverting the transform $f = f(x)$ $f \in L_{\nu}(0, 2\pi)$. Proofs are $f \in L_{\nu}(0, 2\pi)$. Levellt (Fine coon, N. J.).	

ULY ANOV, P.L.

USSR/MATHEMATICS/Theory of functions

CARD 1/2 PG - 182

SUBJECT AUTHOR

ULJANOV P.L.

TITLE PERIODICAL

On the continuation of functions.

Doklady Akad. Nauk 105, 913-915 (1955)

reviewed 7/1956

The author considers a function f(x) which is defined on $[\alpha, \beta]$ and on $[a,b] \subseteq [\alpha,\beta]$ has the property A. He seeks a function $f_1(x)$ which is defined on [c,d] (where $(c,d)\supset [a,b]$), on [a,b] identical with f(x) and on [c,d] possesses the property A. Beside of f(x) its conjugate function

 $\overline{f}(x) = -\lim_{\varepsilon \to 0} \frac{1}{\pi} \int_{-2 \text{ tg } \frac{1}{2} \text{ t}}^{\pi} dt$

is considered. For integrable and continuous functions the following theorems are formulated and a sketchy proof is given: 1. Let the periodic function $f(x) \in L(0,2\pi)$ have the property that f(x) and $\overline{f}(x)$ are integrable on $[a,b] \subseteq [0,2\pi]$ and for a $\epsilon > 0$ holds:

 $\int_{0}^{n} f(b+t)dt = 0 \left\{ \left(\ln \frac{1}{|n|} \right)^{-1-\xi} \right\} , \int_{0}^{n} f(a+t)dt = 0 \left\{ \left(\ln \frac{1}{|n|} \right)^{-1-\xi} \right\} .$

Then there exists a function $\psi(x)$ such that $\psi(x) = f(x)$ on [a,b] and $\psi(x) \in L(0,2\pi)$, $\overline{\psi}(x) \in L(0,2\pi)$. ?. Let $f(x) \in L(0,2\pi)$ be periodic. f(x) and

Doklady Akad. Nauk 105, 913-915 (1955)

CARD 2/2

PG - 182

 $\overline{f}(x)$ continuous on $[a,b] \subset [0,2\pi]$. Then f(x) can be continued from [a,b] to $[0,2\pi]$ such that it and its conjugate function are continuous on the whole interval $[0,2\pi]$. 3. Let $f(x) \in L(0,2\pi)$ be periodic, f(x) and $\overline{f}(x)$ essentially bounded on $[a,b] \subset [0,2\pi]$ and

$$\int_{0}^{t} f(a+n) dn = O(|t|), \qquad \int_{0}^{t} f(b+n) dn = O(|t|)$$

$$\frac{1\text{im}}{h \to 0} \left| \int_{h}^{\pi} \frac{f(a+n)-f(a-n)}{n} dn \right| < \infty , \quad \frac{1\text{im}}{h \to 0} \left| \int_{h}^{\pi} \frac{f(b+n)-f(b-n)}{n} dn \right| < \infty ,$$

then f(x) can be continued from [a,b] to $[0,2\pi]$ such that the property of the essential boundedness for f and f remains true.

INSTITUTION: Lomonossov University, Moscow

ABRAMOV, A.A., redaktor; BOLMYANSKIY, V.G., redaktor; VASIL'YEV, A.M., redaktor; MEDVEDEV, B.V., redaktor; MYSHKIS, A.D., redaktor; NIKOL'SKIY, S.M., otvetstvenny; redaktor; POSTHIKOV, A.G., redaktor; PROKHOROV, Yu.V., redaktor; RYHNIKOV, K.A., redaktor; UL'YAHOV.P.L. redaktor; USPENSKIY, V.A., redaktor; GHETAYEV, N.G., redaktor; SHILOV, G.Ye., redaktor; SHIRSHOV, A.I., redaktor; SIMKINA, Ye.H., tekhnicheskiy redaktor

[Proceedings of the all-Union Mathematical Congress] Trudy tret'ego vsesoiuznogo Matematicheskogo s"ezda; Moskva iiun'-iiul' 1956.

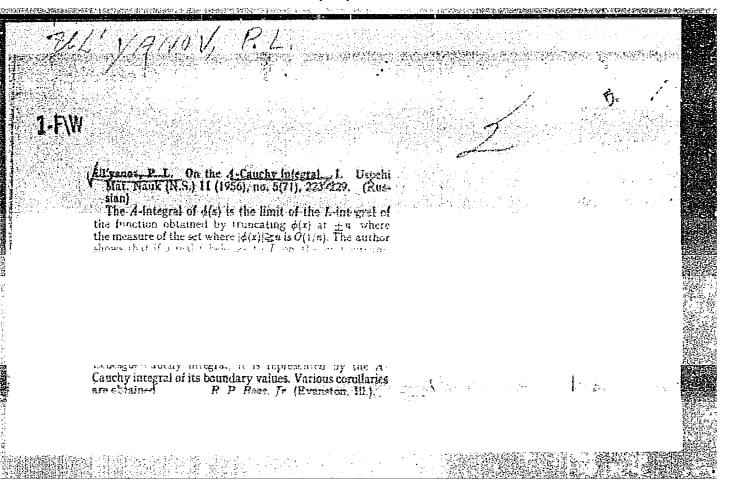
Moskva, Izd-vo Akademii nauk SSSR. Vol.2. [Brief summaries of reports] Kratkoe soderzhanie obzornykh i sektsionnykh dokladov.

1956. 166 p. (MLRA 9:9)

 Vsesoyuznyy matematicheskiy B*yezd. 3, Moscow, 1956. (Mathematics)

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CIA-RDP86-00513R001857920015-3

Subject

USSR/MATHEMATICS/Fourier series

CARD 1/2

PG - 742

AUTHOR TITLE ULJANOV P.L.

On almost everywhere permanently convergent series.

PERIODICAL

Mat.Sbornik, n. Ser. 40, 1, 95-100 (1956)

reviewed 5/1957

An almost everywhere permanently convergent function series is a series which converges almost everywhere for an arbitrary transposition of the terms.

Let $\{P_n(x)\}$ (n=0,1,2,...) be a system of polynémials, being defined on [a,b], being complete with respect to L and closed with respect to L², which is orthonormalized with the wéight $\mathcal{T}(x)$ ($\mathcal{T}(x)$ is defined on [a,b], positive and integrable). The series

(1)

$$\sum_{k=0}^{\infty} c_k P_k(x)$$

is called the Fourier series of the integrable function f(x) if

$$c_k = \int_{a}^{b} f(x) T(x) P_k(x) dx$$
 (k=0,1,2,...).

Let ω (δ ,f) be the modulus of continuity of f on [a,b] with the length of

Mat.Sbornik, n. Ser. 40, 95-100 (1956)

CARD 2/2

PG - 742

steps &. Joining the results of Kolmogorov (Doklady Akad. Nauk 1, 291-294 (1934)) and Natanson (Doklady Akad. Nauk 2, 209-211 (1934)) the author proves the

1. If $f(x) \in L(a,b)$ and

$$\omega(\delta,f) = 0 \left\{ \frac{1}{\ln \frac{1}{\delta} \left(\ln \ln \frac{1}{\delta} \right)^{1+\varepsilon}} \right\} \text{ for } \delta \to +0,$$

then the Fourier series (1) of the function f(x) on [a,b] converges almost everywhere for an arbitrary arrangement of the terms. 2. If f(x) is of bounded variation on a,b and if

$$0 < C(x) \le \frac{A}{\sqrt{(b-x)(x-a)}} \quad \text{for } x \in [a,b] ,$$

then for every <>0 there holds

$$\sum_{k=0}^{\infty} \left| c_k \right|^{1+\xi} < +\infty \qquad \sum_{k=0}^{\infty} c_k^2 \, k^{1-\xi} < +\infty.$$

$$\sum_{k=0}^{\infty} c_k^2 k^{1-k} < +\infty.$$

INSTITUTION: Moscow.

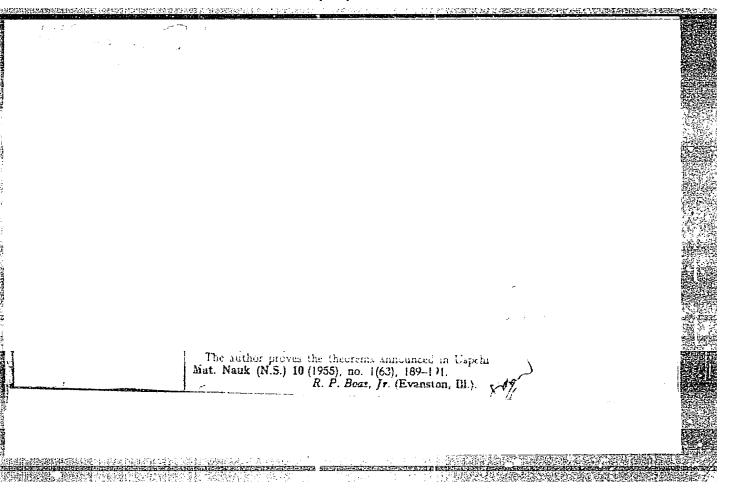
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UL'YANOV, P.L.

A-integral and conjugate functions. Uch. map. Mosk. um. me.181:
139-157 '56.

(Fourier's series)

(Integrals)



UL'	YANOV, P. L.	
r	Call Nr: AF 1108 Transactions of the Third All-union Mathematical Congress (Call Jun-Jul: 156, Trudy 156, V. 1. Sect. Rpts., Izdatel'stvo AN SSSR, Moscow There are 6 references, all of them USSR.	Cont.) Moscow,
	Ul'yanov, P. L. (Moscow). About A-integrals of Cauchy.	107-108
	Fedorov, V. S. (Ivanovo). On Monogenic Functions.	108-109
	Fishman, K. M. (Chernovitsy). On a Class of Hilbert Spaces of Analytic Function.	109
	Fuksman, N. A. (Tashkent). About Analytic Functions of Integral Complex Argument.	109-110
	Khavinson, S. Ya. (Moscow). P. L. Chebyshev's Systems and the Uniqueness of the Best Polynomial Approximation in the Metrics of L. Space.	110
	Card 34/80	

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

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APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001857920015-3

ULYANOV.

USSR/WATHEMATICS/Theory of functions

PG - 724 CARD 1/3

SUBJECT **AUTHOR**

ULJANOV P.L.

On Cauchy A-integrals on curves.

TITLE PERIODICAL Doklady Akad. Nauk 112, 383-385 (1957)

reviewed 4/1957

In the complex ζ -plane let be given a smooth curve 1 of the length 1 beginning in ζ_0 and ending in ζ_0 . Its equation be $\zeta = \tau(s) = \tau_1(s) + i \tau_2(s)$, where s is the arc length of ζ_0 to ζ ($\zeta_0 = \zeta(0)$, $\zeta_0 = \zeta(1_0)$). Then the function $f(\zeta) = f_1(s) + if_2(s)$ being defined on 1 is called A-integrable on 1 if the functions

$$\Psi_1(s) = [f_1(s) T_1'(s) - f_2(s) T_2'(s)]$$

$$\varphi_2(s) = [f_2(s) T_1(s) + f_1(s) T_2(s)]$$

are A-integrable on the line $0 \le s \le l_0$ (as to the A-integrability on lines compare Titchmarsh, Proc.London Math.Soc. 29. 49 (1929). The complex number

Doklady Akad. Nauk 112, 383-385 (1957)

CARD 2/3

PG - 724

$$I = (A) \int_{0}^{1} \varphi_{1}(s) ds + 1(A) \int_{0}^{1} \varphi_{2}(s) ds$$

is called the A-integral of the function $f(\zeta)$ on the curve 1

(A)
$$\int_{\mathbf{I}} f(\zeta) d\zeta = \mathbf{I}$$
.

With the aid of this definition the following principal result can be formulated: Let 1 be a closed curve which limits the domain G. Its equation be $\zeta = \zeta(s) = x(s)+iy(s)$, where

$$|x'(s_2)-x'(s_1)| \le k|s_2-s_1|^{\alpha}$$
, $|y'(s_2)-y'(s_1)| \le k|s_2-s_1|^{\alpha}$

for all s_1 , s_2 and certain constant k > 0, $\alpha > 0$. If the analytic function F(z) is representable in G by an L-integral of the Cauchy type, i.e. if

$$F(z) = \frac{1}{2\pi i} (L) \int_{\zeta} \frac{f(\zeta)}{\zeta - z} d\zeta \qquad (z \in G, f(\zeta) \in L(1)),$$

Doklady Akad. Nauk 112, 383-385 (1957)

CARD 3/3 PG - 724

then

$$F(z) = \frac{1}{2\pi i} (A) \int_{1}^{\infty} \frac{F_{i}(\zeta)}{\zeta - z} d\zeta,$$

where $F_i(\zeta)$ are the limit values of the function F(z) if z coming from the interior of G reaches 1. Some conclusions are given.

20-4-12/51 UL' YANOV, P.L. On Permutations of a Trigonometric System (O perestanovkakh UL'YANOV, P.L. AUTHOR: PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 116, Nr. 4, pp. 568-571 (USSR) trigonometricheskoy sistemy) $\frac{\mathbf{a_0}}{2} + \sum_{k=1}^{\infty} \left(\mathbf{a_k} \cos k \, \mathbf{x} + \mathbf{b_k} \sin k \, \mathbf{x} \right)$ ABSTRACT: be the Fourier series of $f(x) \in L(0,2\pi)$, $f(x+2\pi) = f(x)$. (1) is called unconditionally convergent almost everywhere if it converges almost everywhere after an arbitrary permutation of the terms. Let $E_n^{(2)}(f)$ be the best approximation of f(x) in the metric of the L^2 by trigonometric polynomials of the order (n-1). $\frac{(\ln \ln n)^{1+\epsilon_{\ln n}}}{n} \left\{ E_n^2(f) \right\}^2 < \infty, \quad \epsilon > 0, \text{ then } (1)$ converges unconditionally almost everywhere on [0,2%]. Theorem: If for 6>0 there holds: $\frac{1+\Sigma}{\ln t|\ln \ln t|} \left[f(x+t)-f(x-t)\right]^2 dx dt < \infty,$ Card 1/2

On Permutations of a Trigonometric System

20-4-12/51

then (1) is unconditionally convergent almost everywhere on [0,2%].

Theorem: There exists a continuous $2\Re$ -periodic function f(x) the Fourier series of which after a certain permutation of the terms does not converge on $[0,2\Re]$ for every q > 2 in the metric

of the Lq.

Several further similar results are given which seg. generalize well known results due to Marcinkiewicz [Ref 37 and Orlicz [Ref.8].

ASSOCIATION: Moscow State University im. M.V. Lomonosov (Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova)

PRESENTED BY:A, N. Kolmogorov, Academician, April 10, 1957

SUBMITTED: February 28, 1957
AVAILABLE: Library of Congress

Card 2/2

KACHMAZH, S. [Kaczmarz, Stefan]; SHTHINGAUZ, G.; GUTER, R.S. [translator];
UL'YANOV, P.L. [translator]; VILENKIN, N.Ya., rod.

[Theory of orthogonal series] Teoriia ortogonal'nykh riadov.
Pod red. i s dop. N.IA.Vilenkina. Moskva, Gos.izd-vo fizikomatem.lit-ry, 1958. 507 p.
(Series, Orthogonal)

NIKOT. SKIY, S.M., etv.red.; ABRAMOV, A.A., red.; BOLTYANSKIY, V.G., red.;

VASIL YEV, A.M., red.; MEDVEDEV, B.V., red.; MYSHKIS, A.D., red.;

POSTNIKOV, A.G., red.; PHOKHOROV, Yu.V., red.; RYBHIKOV, K.A.,

red.; UL'YANOV, P.L., red.; USPENSKIY, V.A., red.; CHETAYEV, H.G.,

red.; SHILOV, G.Te., red.; SHIRSHOV, A.I., red.; GUSEVA, I.H.,

tekhn.red.

[Proceedings of the Third All-Union Mathematical Congress] Trudy tret'ego Vsesoiuznege matematicheskogo s"exda. Vel.3 [Symoptic papers] Obzornye doklady. Moskva, Izd-vo Akad.nsuk SSSR. 1958. 596 p. (MIRA 12:2)

1. Vsesoyuznyy matematicheskiy s"yezd. 3d, Moscow, 1956.

1. Vsesoyuznyy matematicheskiy s yexu. Ju. Adak (Mathematics--Congresses)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

P.L. USYANTU,		Cart 3/5
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SOV/155-58-4-11/34 Ul'yanov, P.L. On the Divergence of Orthogonal Series to + m (O raskhodi-TITLE: mosti ortogonal'nykh ryadov k + \omega) Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye PERIODICAL: nauki, 1958, Nr 4, pp 63 - 68 (USSR) Let ABSTRACT: $a_n > 0$ and $\sum_{n=1}^{\infty} a_n^2 = \infty$. Then there exists a system $\left\{ \psi_{n}(x) \right\}$ of bounded functions orthogonally normed on [0,1] so that the orthogonal series $\sum_{k=1}^{\infty} b_k \varphi_k(x)$ for every order of the terms diverges everywhere on [0,1] to $+\infty$, if $b_k \geqslant a_k$. Theorem : Theorem: It exists an orthogonal series $\sum_{n=1}^{\infty} c_n \varphi_n(x)$, which for an arbitrary sequence of the terms diverges everywhere on [0,1]Card 1/2

On the Divergence of Orthogonal Series to $+ \infty$

to $+\infty$, while $\sum_{n=1}^{\infty} \left| \begin{array}{ccc} c_n \end{array} \right|^{2+\xi} <\!\!\! \infty$ is for every t>0. Theorem : On [0,1] there exists an orthogonal series $\sum_{n=1}^{\infty} c_n \phi_n(x)$

with the properties: 1.) it diverges to + co everywhere on $[a,b] \subset (0,1)$ for arbitrary reversal of the terms 2.) the orthogonally normed system $\left\{ \varphi_{n}(x) \right\}$ is bounded on $\left[0,1\right]$. The author mentions D.Ye. Men'shov.

There are 3 references, 2 of which are Soviet, and 1 French.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova (Moscow State University imeni M.V. Lomonosov)

. June 4, 1958 SUBMITTED:

Card 2/2

CIA-RDP86-00513R001857920015-3" APPROVED FOR RELEASE: 03/14/2001

AUTHOR:

Ul'yanov, P.L.

SOV/38-22-4-4/6

TITLE:

On the Series With Respect to a Transposed Trigonometric System (O ryadakh po perestavlennoy trigonometricheskoy

sisteme)

PERIODICAL:

Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1958, Vol 22,Nr 4,pp 515-542 (USSR)

ABSTRACT:

§ 1. Theorem: Let $f(x) \in L^2(0,2\pi)$ and for an $\varepsilon > 0$ let be

 $\frac{(\ln \ln n)^{1+\epsilon} \ln n}{n} \left\{ E_n^{(2)}(f) \right\}^2 < \infty, \text{ where } E_n^{(2)}(f) \text{ is the best}$

approximation of f(x) in the metric L_2 by trigonometric polynomials of order $\leq n-1$. Then the Fourier series of f(x)converges absolutely almost everywhere on [0,27](i.e. under arbitrary transposition of the terms). Theorem: If

 $f(x) \in L^{2}(0,2i)$ and if for an $\ell > 0$ it holds:

Card 1/4

CIA-RDP86-00513R001857920015-3" APPROVED FOR RELEASE: 03/14/2001

On the Series With Respect to a Transposed Trigonometric SOV/38-22-4-4/6 System

$$\int\limits_{0}^{2\pi}\int\limits_{0}^{2\pi}\frac{|\ln t||\ln \ln t||^{1+\mathcal{E}}}{t}\left[f(x+t)-f(x-t)\right]^{2}dt\ dx<\infty\ ,\ then\ the$$

Fourier series of f(x) is absolutely convergent almost everywhere on $[0,2\pi]$. § 2 deals with the summability of the series

$$\frac{a_0}{2} + \sum_{\nu=1}^{\infty} (a_{\nu} \cos k_{\nu} x + b_{\nu} \sin k_{\nu} x)$$
, where all k_{ν} are integer

and different. It is shown, that even the Fourier series with respect to a transposed system also with relatively strong Töplitz methods need no longer be summable.

Töplitz methods need no longer be summable. § 3 Theorem: There exists a fixed transposed trigonometric system $\left\{\cos m_y x , \sin m_y x\right\}$ with the properties 1.) For all $1 \le p < 2$ there exists an f(x) $L^p(0,2\tilde{\nu})$ with derivatives of arbitrary order continuous on $(0,2\tilde{\tau})$ and with f(x)=0 for $x \in [1,2\tilde{\nu}-1]$; the Fourier series

$$f(x) \sim \frac{a_0}{2} + \sum_{y=1}^{\infty} a_{m_y} \cos m_y x + b_{m_y} \sin m_y x$$

Card 2/ 4

On the Series With Respect to a Transposed Trigonometric SOV/38-22-4-4/6 System

of which diverges almost everywhere on $[0,2\tilde{i}]$ and does not converge in the metric L; also the Fourier series for the conju-

gate function $\overline{f}(x) = -\frac{1}{\pi} \lim_{\epsilon \to 0} \left(\frac{f(x+t) - f(x-t)}{2tg \frac{1}{2} t} \right) dt$ diverges

indefinitely on $[0,2\tilde{\imath}]$ and does not converge in the me ic L 2.) There exists a continuous function $\varphi(x)$, the Fourier series of which with respect to the system $\{\cos m_0 x, \sin m_0 x\}$ does not converge on $[0,2\tilde{\imath}]$ in the metric L^p for any p>2. Constructive proof. § 4 brings several conclusions; e.g. it is proved that the transposed system forms in general for p \in [1,2) + (2,00) no base in L^p(0,2 $\tilde{\imath}$). Also the Riemannian localization principle does not hold in general for the transposed system. Similar statements are given in the complex domain. Altogether there are given 27 definitions, theorems, conclusions and remarks.

Card 3/4

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On the Series With Respect to a Transposed Trigonometric SOV/38-22-4-4/6 System

There are 12 references, 6 of which are Soviet, and 6 Polish.

PRESENTED: by Aleksandrov, P.S., Academician

SUBMITTED: October 11, 1957

1. Mathematics 2. Trigonometry 3. Fourier's series

Card 4/4

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3

16(1) AUTHOR:

Ul'yanov, P.L.

SOV/38-22-6-4/6

TITLE:

On Unconditional Convergence and Summability (O bezuslovnoy

skhodimosti i summiruyemosti)

PERIODICAL:

Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1958, Vol 22, Nr 6, pp 811 - 840 (USSR)

ABSTRACT:

The author investigates the connection between the unconditional convergence and summability for trigonometric and orthogonal series. § 1 contains several auxiliary theorems, § 2 considers trigonometric series. Among others it is shown that "unconditional summability" is equivalent to an "unconditional convergence almost everywhere". Furthermore it is shown that the transposed Fourier series of the functions

 $f(x) \in L^{p}(0,2\pi)$ for p>2 are in general almost everywhere summable with no Toeplitz method. In § 3 it is investigated under which conditions the results of § 2 can be transferred to orthogonal series. Moreover it is tried to explain why in certain cases the results for orthogonal series deviate from those trigonometric series. 11 theorems and more than 20 lemmata, consequences, etc are brought.

Card 1/2

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3

On Unconditional Convergence and Summability

SOV/38-22-6-4/6

There are 11 references, 5 of which are Soviet, 5 Polish, and

1 German.

PRESENTED:

by S.L. Sobolev, Academician

SUBMITTED:

September 29, 1957

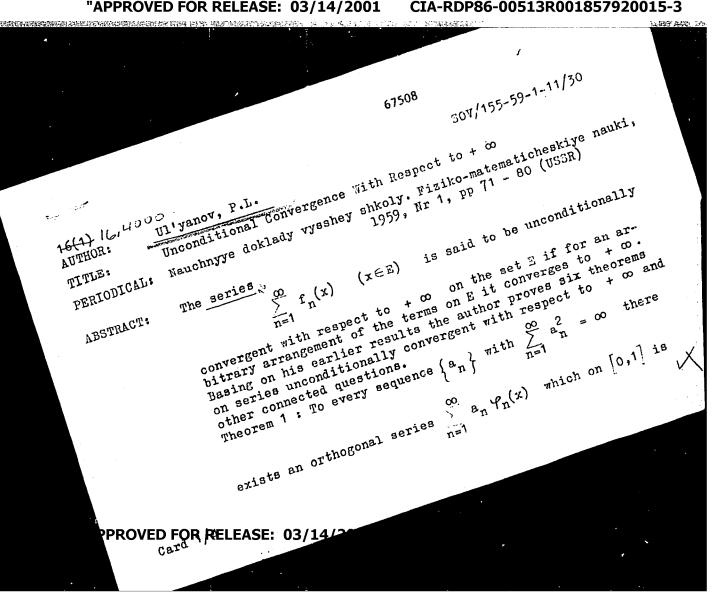
Card 2/2

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3

UL'YANOV, P. L., Doc Phys-Math Sci (diss) -- "A Cauchy-type integral. Convergence and summability". Moscow, 1959. 8 pp (Moscow Order of Lenin and Order of Labor Red Banner State U im M. V. Lomonosov), 150 copies (KL, No 9, 1960, 121)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

CIA-RDP86-00513R001857920015-3 "APPROVED FOR RELEASE: 03/14/2001



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SOV/155-59-1-11/30 Unconditional Convergence With Respect to + co unconditionally convergent with respect to + ∞ . Theorem 2: To every sequence {an} with

(2)
$$\sum_{n=1}^{\infty} a_n^2 = \infty$$

there exists an orthogonal series

(3)
$$\sum_{n=1}^{\infty} a_n \varphi_n(x)$$

which everywhere on [0,1] is summable with a certain Toepplitzmethod T, while no subsequence $S_{k_i}(x) = \frac{k_i}{n-1}$ and $a_{n+1}(x)$ con-

verges in any point $x \in [0,1]$. Then there exists a number S > 0 so that system on [0,1]. Then there exists a number S > 0 so that

card 2/4

Unconditional Convergence With Respect to + oo

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if the series

(22)
$$\sum_{n=1}^{\infty} a_n r_n(x) , \quad |r_n(x)| = A$$

has partial sums for an arbitrary arrangement of the terms

$$\sum_{i=1}^{\infty} a_{k_i} \varphi_{ki}(x)$$
 satisfying the inequation

(23)
$$\lim_{N\to\infty} \sum_{i=1}^{N} a_{k_i} \varphi_{ki}(x) > -\infty \quad \text{for } x \in E ,$$

where $m \ge 1 - \delta$, then

(24)
$$\sum_{n=1}^{\infty} |a_n| < \infty$$

i.e. the series (22) converges absolutely on [0,1] . From

Card 3/4

15

sov/155-59-1-11/30 Unconditional Convergence With Respect to + co this theorem there results as a special case a theorem of Privalov / Ref 4 / . Theorem 4: If $\{ \psi_n(x) \}$ is a bounded orthogonally normed system

on [0,1], then there exists no series $\sum_{n=1}^{\infty} a_n \psi_n(x)$ which on

a set E 0,1 with m E = 1 is unconditionally convergent with respect to $+\infty$.

Theorem 6': There exists no trigonometric series

 $\sum_{n=1}^{\infty} (a_n \cos 2\pi nx + b_n \sin 2\pi nx) \text{ which on E with m E>0 is}$

unconditionally convergent with respect to $+\infty$.

The author mentions Z.N. Kazhdan.

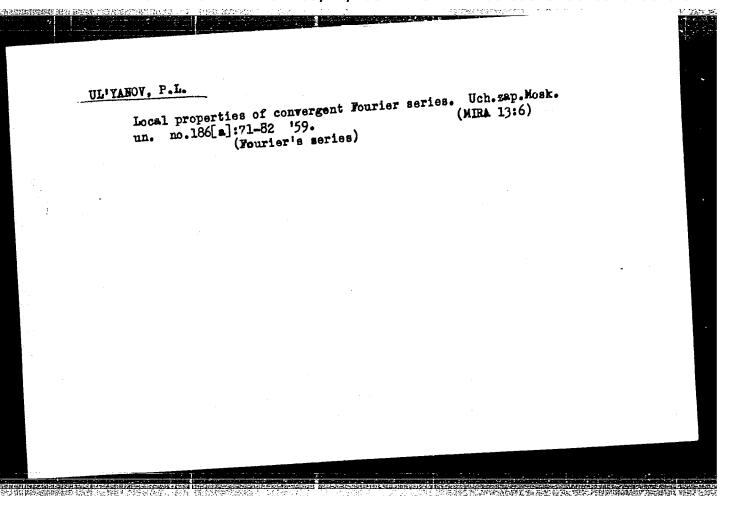
There are 5 references, 3 of which are Soviet, 1 Polish and

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova

(Moscow State University imeni M.V. Lomonosov)

January 19, 1959 SUBMITTED:

Card 4/4



APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3"

16.4200

5/055/59/000/05/004/020

AUTHOR: Ul'yanov, P. L. TITLE:

Singular Integrals and Fourier Series

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, No. 5, vol. 14 pp. 33-42

TEXT: The author constructs a continuous function f(x) for which the limit

 $\frac{f(x+t)+f(x-t)-2f(x)}{dt}$ lim (5)

exists for no x. The Fourier series of this function, however, is uniformly convergent. Moreover it is shown that the functions f(x) with these properties form a set of first category in the set of the continuous 2m -periodical functions. Furthermore it is proved: Theorem 2: There exist two conjugate continuous periodical functions $F_1(x)$ and $F_2(x)$ with the properties:

for all x; i = 1,2Card 1/2

Singular Integrals and Fourier Series s/055/59/000/05/004/020

exists for all x; i = 1,2

3.) The Fourier series of $F_1(x)$ and $F_2(x)$ converge uniformly on The author mentions N. N. Luzin and Kolmogorov. There are 6 references: 2 Soviet, 3 Polish and 1 English SUBMITTED: October 12, 1956

Card 2/2

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001857920015-3

16(1) 16.2600

AUTHOR: Ul'yanov, P.L.

05704

SOV/38-23-5-8/8

TITLE:

Unconditional Summability

PERIODICAL: Izvestiya Akademii nauk

Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1959,

Vol 23, Nr 5; pp 781 - 808 (USSR)

ABSTRACT:

The paper contains proofs and some generalizations of the questions already treated by the author in [Ref 4,5,6] concerning the unconditional summability of function and numerical series, whereby the notion of summability is somewhat extended. Altogether the author gives eight theorems, eleven conclusions and ten lemmata. He mentions I.I. Volkov

and A.M. Olevskiy.

There are 12 references, 6 of which are Soviet, 3 Polish,

2 English, and 1 American.

PRESENTED:

by A. N. Kolmogorov, Academician

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AUTHOR;

Ul'yanov, P. L.

TITLE:

Convergence and summability

PERIODICAL:

Referativnyy zhurnal, Matematika, no. 2, 1962, 12-13, abstract 2B59. ("Tr. Mosk. matem. o-va," 1960, 9,

373-399)

TEXT: This paper is a continuation of the author's examination of unconditionally summable (in one sense or another) function series (Rzh. Mat., 1960, 7396). By $B = \|B_{nm}\|$ linear regular summation methods with the aid of factors are denoted. $B^{*} = \|B_{nm}\|$ denotes methods which satisfy the conditions

 $\lim_{n \to \infty} B_{nm} = 1 \quad (m = 0, 1, 2, ...),$

(1).

 $\lim_{m \to \infty} B_{nm} = \begin{cases} y_n, & \lim_{n \to \infty} \begin{cases} y_n = 0 \end{cases} \end{cases}$

B** denotes methods having matrices which satisfy (1). By T*= $\|a\|$ Card 1/6

Convergence and summability

S/044/62/000/002/008/092 C111/C222

linear Toeplitz methods are denoted for which

$$\lim_{n \to \infty} a_{nm} = 0 \quad (m = 0, 1, ...), \quad \lim_{n \to \infty} \sum_{n = 1} a_{nm} = 1.$$

Function series

$$\sum_{n=0}^{\infty} f_n(x) \quad (x \in E)$$
 (2)

are considered, where the $f_n(x)$ may not be measurable. The series

$$\sum_{k=0}^{\infty} f_{n_k}(x)$$

is called a partial series of the first kind of (2), and the series

$$\sum_{n=0}^{\infty} \int_{n} f_{n}(x), \quad \int_{n} = 0, \text{ or } 1$$
Card $2/6$

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s/044/62/000/002/008/092 0111/0222

Convergence and summability

is a partial series of the second kind of (2). The series

$$\sum f_{\vec{v}_k}(x)$$

resulting by rearranging the terms of (2) is called a weak rearrangement of (2) if the sequence $\{\forall_k\}$ splits into finitely many increasing sequences. If for every weak rearrangement of (2) the B-means $\mathfrak{S}_N(x)$ of the resulting series ($\mathfrak{S}_N(x)$ is understood in the sense of

convergence with respect to the outer measure) converge for $N\to\infty$ on E (almost everywhere on E) with respect to the outer measure, then (2) is weakly, unconditionally B-summable with respect to the outer measure on E (almost everywhere on E). The weak unconditional B^+- , $B^{*+}-$, and T^+- summability with respect to the outer measure on E, or almost everywhere on E, are defined in analogy.

Theorem 1: If the series

$$\sum_{n=0}^{\infty} \gamma_n(x) \quad (x \in E)$$

is weakly, unconditionally $B^{\frac{2}{3}}$ - summable ($T^{\frac{1}{3}}$ - summable) on E with Card 3/6

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Convergence and summability

S/044/62/000/002/008/092 C111/0222

respect to the outer measure, then

$$\Psi_n(x) = f(x) + \eta_n(x), x \in E$$

where f(x) is a finite function on E, and the series

$$\sum_{n=0}^{\infty} \ \gamma_n(x)$$

converges unconditionally on E according to the outer measure. If the method B* (method T*) does not sum-up the series

$$\sum_{n=0}^{\infty} 1$$

(3)

then

$$f(x) = 0, x \in E$$
.

Theorem 5: If the series

Card 4/6

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Convergence and summability

S/044/62/000/002/003/092 C111/C222

$$\sum_{n=0}^{\infty} \psi_n(x) \quad (x \in [0,1])$$

is such that each of its partial series of the first kind on [0,1] is B^{++} - summable with respect to the outer measure, then

$$\Psi_n(x) = f(x) + \mathcal{X}_n(x)$$

where f(x) is a finite function, and the series $\sum_{n=0}^{\infty} \gamma_n(x)$ on [0,1] unconditionally with respect to the outer measure. Here f(x) = 0 if (3) is not $B^{\frac{1}{4}} - \text{summable}$.

Theorem 7: If the series

$$\sum_{i=0}^{\infty} f_i(x), \quad x \in E$$
 (4)

is such that each of its partial series of the second kind is B** summable on E with respect to the outer measure, then (4) is uncondi-

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Convergence and summability

tionally convergent on E with respect to the outer measure.

A few conclusions are drawn from the stated theorems. The unconditional summability almost everywhere and the case of numerical series are considered. Applications of the obtained results are given regarding orthogonal series and series of the type

$$\sum_{n=0}^{\infty} a_n + (\lambda_n x + (\lambda_n))$$

where $\varphi(x)$ is a periodic function, the integral of which is 0. [Abstracter's note: Complete translation.]

Card 6/6

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AUTHOR: Ul'yanov, P.L.

TITLE: Convergence and summability

SOURCE: Moskovskoye matematicheskoye obshchestvo Trudy, v. 9, 1960, 373 - 399

TEXT: The results of this article were reported to the Moscow Mathematical Association on November 24, 1959. The author defines $B=//B_{n,m}//$ as the methods satisfying

$$\lim_{n \to \infty} B_{n,m} = 1 \qquad (m = 0, 1, ...)$$
 (1)

and $\lim_{n \to \infty} B_{n,m} = \gamma_n, \quad \lim_{n \to \infty} \gamma_n = 0. \tag{2}$

If only (1) is satisfied, the method is denoted by B^{**} , $T^* = a_{n,m}$ denotes the linear methods of Teplits

Card 1/14 $\lim_{n\to\infty} a_{n,m} = 0 \quad (m = 0, 1, ...) \quad (3)$

30005 \$/550/60/009/000/004/008 D251/D305

Convergence and summability

$$\lim_{n \to \infty} \sum_{m=0}^{\infty} a_{n,m} = 1.$$
 (4)

The author then states and proves the following theorems: Theorem U1: If the series

$$\sum_{n=0}^{\infty} \psi_n(x) \qquad (\clubsuit \in E) \tag{19}$$

is weakly absolutely B^{**} - summable (T^* summable) on E according to the lower measure that

$$\psi_{n}(x) = f(x) + \eta_{n}(x) \qquad (x \in \mathbb{A})$$
 (20)

where f(x) is a finite function on E and

$$\sum_{n=0}^{\infty} \eta_n(x) \tag{21}$$

Card 2/14

S/550/60/009/000/004/008 D251/D305

Convergence and summability

is absolutely convergent on E according to the lower measure. Also, if the method B** (T*) does not sum the series

$$\sum_{n=0}^{\infty} 1 \tag{20}$$

then $f(x) \equiv 0$ for $x \in \bigcirc$ Theorem 2: If series (19) consists of metric functions and is weakly absolutely B**-summable (T*-summable) on E according to the measure (20), then series (21) is absolutely convergent on E according to the measure and

$$\sum_{n=0}^{\infty} \gamma_n^2(x) < \infty \tag{29}$$

almost everywhere on E. Also, if B^{**} (T*) does not sum the series (22) then $f(x) \equiv 0$ on E. Theorem 3: If near the terms of the series

Card 3/14

30005 S/550/60/009/000/004/008 D251/D305

Convergence and summability

$$\sum_{n=0}^{\infty} \psi_n(x) \qquad (x \in [0, 1])$$
 (30)

there are infinitely many metric functions and the series (30) is weakly absolutely B*-summable (T*-summable) almost everywhere on [0, 12, then

 $\Psi_{\mathbf{n}}(\mathbf{x}) = \mathbf{f}(\mathbf{x}) + \Psi_{\mathbf{n}}(\mathbf{x}), \ (\mathbf{x} \in [0, 1])$ (31)

where f(x) is a metric finite function on [0, 1] and the series

$$\sum_{n=0}^{\infty} \eta_n(x) \tag{32}$$

is weakly absolutely convergent almost everywhere on [0, 1]. If B* (T*) does not sum (22) then $f(x) \equiv 0$. The result of A.M. Olevskiy (Ref. 15: DAN 125, No. 2, 1959, 269-272) is mentioned in the discussion on this theorem. Theorem 4: There exists a regular me-

Card 4/14

30005 S/550/60/009/000/004/008 D2**9**/D305

Convergence and summability

thod $B = //B_{n,m}//$ and an orthogonal series

$$\sum_{n=0}^{\infty} a_n \varphi_n(x) \quad (a_n \varphi_n(x) \rightarrow 0 \text{ on } [0, 1])$$
 (33)

which diverges everywhere on [0, 1] and which neverthele is absolutely B-summable almost everywhere on [0, 1]. The orthogonal series of Men'shov is used in the proff (Ref. 14: Kachmazh S., and G. Shteyngauz, Teoriya ortogonal nykh ryadov (Theory of Orthogonal Series) M., Fizmatgiz, 1958). Theorem 3: If the series

$$\sum_{n=0}^{\infty} \psi_n(x) \qquad (x \in [0, 1]) \tag{48}$$

is such that any of its partial series of the first kind are B**-summable on $[0,\ 1]$ according to the lower measure

$$\psi_n(x) = f(x) + \gamma_n(x)$$

Card 5/14

30005 S/550/60/009/000/004/008 D251/D305

Convergence and summability

where f(x) is a finite function and the series

$$\sum_{n=0}^{\infty} \eta_n(x)$$

is absolutely convergent on [0, 1] according to the lower measure. f(x) = 0 if (22) is not B**-summable. Theorem 6: There exists an orthogonal series

$$\sum_{n=0}^{\infty} c_n \varphi_n(x) \quad (c_n \varphi_n(x) \rightarrow 0 \text{ on } [0, 1]), \tag{56}$$

and which nevertheless is such that any one of its partial series of the first kind is (C, 1)-summable almost everywhere on [0, 1] [Abstractor's note: (C, 1) summability not defined]. Theorem 7% If the series

Card 6/14

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Convergence and summability

$$\sum_{i=0}^{\infty} f_i(x) \qquad (x \in E) \tag{70}$$

is such that any of its partial series of the second kind is B**summable on E according to the lower measure, then (70) is absolutely convergent on E to the lower measure. Theorem 8: If series
(70) consists of metric functions on [0, 1] and any of its par(70) consists of the second kind is B**-summable on [0, 1], then this
tial series of the second kind is B**-summable on [0, 1], then this
series is absolutely convergent on [0, 1] according to the measure, and

$$\sum_{i=0}^{\infty} f_i^2(x) < \infty \text{ for almost all } x \in [0, 1].$$
 (72)

Theorem 9: If the series

$$\sum_{i=0}^{\infty} f_i(x) \qquad (x \in E) \tag{75}$$

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